

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for adjusting data modulation at a base station comprising:

receiving data in data blocks from a higher layer ARQ mechanism at a physical layer transmitter for transmission;

formatting the received data blocks into packets for transmission, the packets being smaller in size than the data blocks, and each packet having a forward error correction (FEC) ~~type-of~~ encoding/data modulation;

appending an error check sequence for each packet;

providing a physical layer ARQ mechanism performing steps including:

transmitting the packets using an orthogonal frequency division multiple access (OFDMA) air interface;

storing the packets for retransmission in a buffer memory incorporated into the physical layer transmitter;

monitoring a return channel for receipt of an acknowledgment for each packet that the packet has been received;

limiting the number of retransmissions to an operator-defined integer value;

clearing the buffer memory after the integer value is reached;

retransmitting an original or selectively modified packet at the physical layer transmitter in response to a failure to receive a corresponding acknowledgement for a given packet; wherein the physical layer ARQ mechanism and physical layer transmitter operate transparently with respect to the higher layer ARQ mechanism;

receiving and demodulating received packets at a physical layer

receiver;

receiving a corresponding acknowledgement for a given packet at the physical layer receiver, wherein a mechanism configured to receive the corresponding acknowledgment for the given packet operates transparently with respect to the higher layer ARQ mechanism;

collecting retransmission statistics and adjusting the FEC encoding/data modulation using the collected statistics at an adaptive modulation and coding controller; wherein on a condition that the collected retransmission statistics indicate a low number of retransmissions, a higher capacity FEC encoding/data modulation scheme is selected and if on a condition that the collected retransmission statistics indicate a high number of retransmissions, a lower capacity FEC encoding/data modulation scheme is selected;

buffering, decoding, and detecting packet errors at a combiner/decoder;

generating an acknowledgement for each received packet in an acknowledgement generator in response to that packet having an acceptable error rate; and

selectively nulling subchannels from an OFDM frequency set for the retransmitting, wherein the use of a poor quality subchannel is precluded for a predetermined period and adding a previously nulled subchannel back into the OFDM frequency set where a retransmission rate or link quality indicates a high quality for the previously nulled subchannel.

4. (Original) The method of claim 1 wherein the packets are transmitted using a single carrier having a frequency domain equalization (SC-FDE) air interface.

5. (Currently Amended) The method of claim 1 wherein ~~the a~~ return channel is the fast feedback channel when the packets are transmitted using a code

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division multiple access (CDMA) air interface.

6. (Original) The method of claim 1 further comprising:
identifying a packet as having an unacceptable error rate responsive to receipt of a negative acknowledgment.
10. (Previously Presented) The method of claim 1 wherein the physical layer ARQ mechanism reduces retransmissions required by the higher layer ARQ mechanism.